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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/479,795	01/10/2000	DAVID J. LUNDIN	53714USA6B	3553

7590 05/04/2004

ATTN STEPHEN W BUCKINGHAM
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EXAMINER

CARIASO, ALAN B

ART UNIT PAPER NUMBER

2875

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/479,795	LUNDIN, DAVID J.	
	Examiner	Art Unit	
	Alan Cariaso	2875	<i>AW</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7-10,13-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 2,3,6,11,12 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040212, 20031019</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's response on February 12, 2004 is acknowledged. Furthermore, in a telephone interview on April 14, 2004, the applicant's representative was informed that a non-final action is being provided in response to applicant's amendment after-final (of February 12, 2004). Prior art added to the record have been further considered, which led to the decision to provide the non-final action below. The finality of the previous office action has been withdrawn. The details of this non-final action are provided below. Currently, claims 1-17 and 19 are pending.

Drawings

2. The drawings (of figures 4 & 5) were received on February 10, 2003. These drawings are approved.

Claim Objections

3. Claim 19 is objected to because of the following informalities: Claim 19 is objected for depending on cancelled claim 18. Furthermore, "the shape" is unclear as to which part of the invention this is associated. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by DUNAH et al (US 5,420,761).

6. DUNAH discloses an illumination device (fig.3) comprising: a light guide (11) including a light guide core (11) having an optically smooth surface (27) for propagating light therethrough (note light ray that reaches end surface 31 in fig. 3) and a light emitting region (18) extending along a portion of the core (11), the light emitting region (18) including: at least one light extraction structure (26) located along the optically smooth surface (27) of the light guide core (11), said light extraction structure (26) including an optically reflective surface (col.2, line 38 or col.3, line 31) extending into the light guide core and oriented to reflect light at an angle less than a critical angle (col.2, lines 58-61) necessary for light to propagate through the light guide core (11); and a diffuse reflective material (19,21) disposed around at least a portion of the light guide (11) to direct at least a portion of the light reflected by the light extraction structure (26) back through the light guide core (11) so that light is emitted through the light emitting region (18) of the optically smooth surface (27); wherein said light guide (11) is a planar light guide (fig.1); further comprising a plurality of light extraction structures (26-fig.3) along the optically smooth surface (27) of the light guide core (11); wherein the plurality of light extraction structures (26) are unequally spaced apart from one another along the optically smooth surface (col.3, lines 13-14); wherein said light guide (11) is formed from a polymerizable material (col.3, lines 18-19).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9, 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over DUNAH et al (US 5,420,761) in view of GOTO et al (US 5,999,685).

9. DUNAH discloses the claimed invention except: the polymerizable material of the light guide being an acrylate material and a urethane material; and the shape at least partially resembling a letter, numeral, or symbol.

10. GOTO teaches a light guide made of any of an acrylate material and a urethane material (col.5, lines 21-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the light guide of DUNAH et al made of a acrylate or urethane material as taught by GOTO et al in order to make use of transparent material that allows a degree of internal reflection (refractive index greater than 1.0) to propagate light therein.

11. As for the claimed shape of a letter, numeral, or symbol, it is considered to be well known in the art of at least back lighted LCD devices for the LCD (as shown "23" in DUNAH) to produce a changeable display that includes alphanumeric illustration or any symbol for the purpose of displaying visual information or any visual illustrations that include symbols. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the LCD backlighting device of DUNAH et al

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that includes shapes of letter, numeral or symbols at least on the LCD as known in the art in order to display information or illustrations.

12. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over DUNAH et al (US 5,420,761) in view of ISHII et al (US 5,710,856).

13. DUNAH discloses the claimed invention except: the diffuse reflective material comprising a polymeric material (claim 13), microvoided material (claim 14), material formed by thermally induced phase separation (claim 15), and microporous material (claim 16).

14. ISHII teaches a light reflecting layer (32,33 in figs.1-2) disposed on a major surface of a light guide (4), the reflecting layer (32,33) comprising a porous resin sheet comprising a polyolefin resin mixed with a finely powdery inorganic filler (col.4, lines 11-20) for the purpose of producing diffusion reflection (col.5, lines 14-19), and that the reflecting layer made of resin with inorganic filler being stretched forms voids and interfaces between the resin and voids of inorganic filler causes irregular reflection (col.3, lines 45-53; col.7, line 23 to col.8, line 40), wherein the porosity and voids of the polyolefin reflecting layer or sheet being in the magnitude of micrometers as suggested by at least the layer thickness (col.10, lines 27-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the diffusion reflective material disposed on the light guide of DUNAH et al made of a porous, voided polymeric (polyolefin w/ filler) composition as taught by ISHII et al in

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order to cause irregular reflection or diffusion reflection while minimizing light leakage through the porous material.

15. Regarding claim 15, which recite "wherein the diffuse reflective sheet material is a material formed by thermally induced phase separation", please note that the method of forming the device is not germane to the issue of patentability of the device itself. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, this (i.e. method) limitation has not been given patentable weight.

Allowable Subject Matter

16. Claims 2, 3, 6, 11, 12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art of record suggests a light guide being a light fiber or a light guide having circular cross-sectional shape in combination with at least one optically reflective light extraction structure along an optically smooth surface of a light guide core of the light guide and diffuse reflective material disposed around at least a portion

of the light guide to direct at least a portion of light reflected by the light extraction structure back through the light guide core so that light is emitted through the light emitting region; and further a plurality of the light extraction structures being equally space apart from one another along the optically smooth surface of the light guide, a cladding material surrounding the light guide core, and the diffuse reflective material comprising a micro-porous material of polytetrafluoroethylene.

Response to Arguments


18. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (571) 272-2366. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan Cariaso
Primary Examiner
Art Unit 2875

AC
April 23, 2004